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## Exotic Newcastle Disease

Exotic Newcastle disease (END)—also known as velogenic viscerotropic Newcastle disease—is a contagious and fatal viral disease affecting all species of birds. END is so virulent that many birds die without having developed any clinical signs. END can infect and cause death even in vaccinated poultry. Mortality is up to 90 percent of exposed birds. The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) is the Federal agency that takes the lead in excluding END from the United States and responding to any END outbreaks that do occur.

### Clinical Signs

END affects the respiratory, nervous, and digestive systems. The incubation period for the disease ranges from 2 to 15 days. An infected bird may exhibit the following signs:

- Respiratory: sneezing, gasping for air, nasal discharge, coughing
- Digestive: greenish, watery diarrhea
- Nervous: depression, muscular tremors, drooping wings, twisting of head and neck, circling, complete paralysis
- Reduction in or complete loss of egg production
- Swelling of the tissues around the eyes and in the neck
- Sudden death



Figure 1—Chickens with END exhibit signs of depression and respiratory distress.



Figure 2—Another symptom of END is the inability to perch or fly, as shown in this picture of an affected budgerigar (budgie).



Figure 3—Birds illegally smuggled into the United States are not quarantined and tested by the USDA and therefore may carry the exotic Newcastle virus.

### Introduction and Spread of END

END is spread primarily through direct contact between healthy birds and the bodily discharges of infected birds. The disease is transmitted through infected birds' droppings and secretions from the nose, mouth, and eyes.

END can also be spread easily by mechanical means. Virus-bearing material can be picked up on shoes and clothing and carried from an infected flock to a healthy one. The disease is often spread by vaccination and debeaking crews, manure haulers, rendering-truck drivers, feed-delivery personnel, poultry buyers, egg service people, and poultry-farm owners and employees.

END can survive for several weeks in a warm and humid environment on birds' feathers, manure, and other materials. It can survive for very long periods in frozen material. However, the virus is destroyed rapidly by dehydration and by the ultraviolet rays in sunlight.

### Biosecurity Measures on the Farm

The only way to eradicate END from commercial poultry is by destroying all infected flocks and imposing strict quarantine and in-depth surveillance



programs. Poultry producers should strengthen biosecurity practices to prevent the introduction of END into their flocks. Biosecurity is also important to protect backyard and hobby flocks. The following are tips on proper biosecurity practices:

- Permit only essential workers and vehicles on the premises.
- Provide clean clothing and disinfection facilities for employees.
- Clean and disinfect vehicles (including tires and undercarriages) entering and leaving the premises.
- Avoid visiting other poultry operations.
- Maintain an "all-in, all-out" philosophy of flock management with a single-age flock.
- Protect flocks from wild birds that may try to nest in poultry houses or feed with domesticated birds.
- Control movements associated with the disposal and handling of bird carcasses, litter, and manure.
- Take diseased birds to a diagnostic laboratory for examination.

### Biosecurity Measures for Backyard-Poultry Enthusiasts and Pet-Bird Owners

END is also a threat to the caged-bird industry and poultry hobbyists. Birds illegally smuggled into the United States are not quarantined and tested by USDA and therefore may carry the END virus. Owners of pet birds should

- Request certification from suppliers that birds are legally imported or are of U.S. stock, are healthy prior to shipment, and will be transported in new or thoroughly disinfected containers.
- Maintain records of all sales and shipments of flocks.
- Isolate all newly purchased birds for at least 30 days.
- Implement stringent biosecurity practices to prevent the introduction of END to pets and backyard flocks.

### What Happens in an Outbreak

In the event of an END outbreak, if you live on or near an affected premises, you may see individuals dressed in white suits, plastic boots, eye goggles, masks, and other special clothing before they enter your yard. These are Federal or State animal health officials trained in disease control techniques. Animal health officials take great precautions not to spread END from one premises to another.

Animal health officials who have *not* been in affected yards will canvas the area and place quarantines on the premises of neighbors who own birds. If they have not had exposure to infected birds, these birds will be monitored periodically for signs of disease until the quarantine can be lifted. If they have been exposed to the disease, they may need to be humanely depopulated in order to prevent further spread.

Once a premises is identified as END positive, Federal and State personnel will humanely depopulate infected and exposed birds. The carcasses of the birds will be removed from the premises in a manner that prevents the spread of infection. Cleaning and disinfection of the area will then be conducted as quickly and thoroughly as possible.

In addition, to prevent END from being introduced into U.S. poultry flocks, APHIS requires that all imported birds (poultry, pet birds, birds exhibited at zoos, and ratites) be tested and quarantined for diseases before entering the country.



Figure 4—If END is detected in U.S. poultry, measures such as quarantine, control, and cleanup are implemented to prevent opportunities for the virus to spread.

### Report Sick Birds

If birds exhibit clinical signs of END or may have been exposed to birds with the disease, don't wait. Report unusual signs of disease or unexpected deaths among your birds. Call your agricultural extension agent, local veterinarian, the State Veterinarian, or USDA Veterinary Services office. USDA operates a toll-free hotline (1-866-536-7593) with veterinarians to help you. USDA wants to test sick birds to make sure they do not have a serious poultry disease. There is no charge for USDA veterinarians to work with you to conduct a disease investigation.

### Additional Information

For additional information on END and how to practice biosecurity, visit the APHIS Web site at <<http://www.aphis.usda.gov/vs/birdbiosecurity>>.

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This publication supersedes APHIS 91-55-067, which was published in February 2003.



